

A065us.txt

SEQUENCE LISTING

<110> BIOGEN, INC.
Pepinsky, Blake
Runkel, Laura
Brickelmaier, Margot
Whitty, Adrian
Hochman, Paula

<120> Polymer Conjugates of Interferon Beta-1a
and Uses

<130> A065PCT

<140> PCT/US99/24201
<141> 1999-10-15

<150> 60/104,572
<151> 1998-10-16

<150> 60/120,161
<151> 1999-02-16

<160> 29

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<213> murine

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120
ttgaatggga ggcttgaata ctgcctcaag gacaggatga actttgacat ccctgaggag
180
attaaggcgc tgcagcagtt ccagaaggag gacgcccgc tgcacatcta tgagatgctc
240
cagaacatct ttgctatccc cagacaagat tcatactagca ctggctggaa tgagactatt
300
gttgagaacc tcctggctaa tgtctatcat cagataaacc atctgaagac agtcctggaa
360
gaaaaactgg agaaagaaga tttcaccagg gaaaaactca tgagcagtct gcacctgaaa
420
agatattatg ggaggattct gcattacctg aaggccaagg agtacagtca ctgtgcctgg
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540

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549

<210> 2

<211> 183

<212> PRT

<213> murine

<400> 2

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Lys Met Ser Tyr Asn Leu Leu Gly Phe Leu Gln Arg Ser Ser Asn Phe
20 25 30

Gln Cys Gln Lys Leu Leu Trp Gln Leu Asn Gly Arg Leu Glu Tyr Cys
35 40 45

Leu Lys Asp Arg Met Asn Phe Asp Ile Pro Glu Glu Ile Lys Gln Leu
50 55 60

Gln Gln Phe Gln Lys Glu Asp Ala Ala Leu Thr Ile Tyr Glu Met Leu
65 70 75 80

Gln Asn Ile Phe Ala Ile Phe Arg Gln Asp Ser Ser Ser Thr Gly Trp
85 90 95

Asn Glu Thr Ile Val Glu Asn Leu Leu Ala Asn Val Tyr His Gln Ile
100 105 110

Asn His Leu Lys Thr Val Leu Glu Glu Lys Leu Glu Lys Glu Asp Phe
115 120 125

Thr Arg Gly Lys Leu Met Ser Ser Leu His Leu Lys Arg Tyr Tyr Gly
130 135 140

Arg Ile Leu His Tyr Leu Lys Ala Lys Glu Tyr Ser His Cys Ala Trp
145 150 155 160

Thr Ile Val Arg Val Glu Ile Leu Arg Asn Phe Tyr Phe Ile Asn Arg
165 170 175

Leu Thr Gly Tyr Leu Arg Asn
180

<210> 3

<211> 60

<212> DNA

<213> human

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<210> 4

<211> 39

<212> DNA

<213> human

<400> 4

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<211> 35
<212> DNA
<213> human

<400> 5
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<210> 6
<211> 35
<212> DNA
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<400> 6
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<210> 7
<211> 87
<212> DNA
<213> human

<400> 7
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attttcagtg tcagaagctc ctgtggc
87

<210> 8
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<212> DNA
<213> human

<400> 8
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<210> 9
<211> 52
<212> DNA
<213> human

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52

<210> 10
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<212> DNA
<213> human

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agattaagca gctgca
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<210> 11
<211> 76
<212> DNA
<213> human

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60
agattaagca gctgca
76

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<211> 51
<212> DNA
<213> human

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78

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<212> DNA
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atctagcact ggctggaa
78

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<212> DNA
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agacagttct ag
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ctgcagttct ag
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<212> DNA
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44

<210> 19
<211> 69
<212> DNA
<213> human

<400> 19
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ctgaaaaga
69

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<210> 20

<211> 51

<212> DNA

<213> human

<400> 20

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<210> 21

<211> 163

<212> DNA

<213> human

<400> 21

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attacctgaa ggccgctgca tactcacact gtgcctggac gat
163

<210> 22

<211> 87

<212> DNA

<213> human

<400> 22

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ggagtagcgt gcatgtgcct ggacgat
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<210> 23

<211> 50

<212> DNA

<213> human

<400> 23

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<210> 24

<211> 166

<212> PRT

<213> human

<400> 24

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Cys Gln Lys Leu Leu Trp Gln Leu Asn Gly Arg Leu Glu Tyr Cys Leu

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20	25	30	
Lys Asp Arg Met Asn Phe Asp Ile Pro Glu Glu Ile Lys Gln Leu Gln			
35	40	45	
Gln Phe Gln Lys Glu Asp Ala Ala Leu Thr Ile Tyr Glu Met Leu Gln			
50	55	60	
Asn Ile Phe Ala Ile Phe Arg Gln Asp Ser Ser Ser Thr Gly Trp Asn			
65	70	75	80
Glu Thr Ile Val Glu Asn Leu Leu Ala Asn Val Tyr His Gln Ile Asn			
85	90	95	
His Leu Lys Thr Val Leu Glu Glu Lys Leu Glu Lys Glu Asp Phe Thr			
100	105	110	
Arg Gly Ala Leu Met Ser Ser Leu His Leu Lys Arg Tyr Tyr Gly Arg			
115	120	125	
Ile Leu His Tyr Leu Lys Ala Lys Glu Tyr Ser His Cys Ala Trp Thr			
130	135	140	
Ile Val Arg Val Glu Ile Leu Arg Asn Phe Tyr Arg Ile Asn Arg Leu			
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Thr Gly Tyr Leu Arg Asn			
165			

<210> 25

<211> 166

<212> PRT

<213> human

<400> 25

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20	25	30	
Lys Asp Arg Met Asn Phe Asp Ile Pro Glu Glu Ile Lys Gln Leu Gln			
35	40	45	
Gln Phe Gln Lys Glu Asp Ala Ala Leu Thr Ile Tyr Glu Met Leu Ala			
50	55	60	
Asn Ile Ala Ser Ile Phe Arg Gln Asp Ser Ser Ser Thr Gly Trp Asn			
65	70	75	80
Glu Thr Ile Val Glu Asn Leu Leu Ala Asn Val Tyr His Gln Ile Asn			
85	90	95	
His Leu Lys Thr Val Leu Glu Glu Lys Leu Glu Lys Glu Ala Ala Thr			
100	105	110	
Ala Gly Ala Ala Met Ser Ala Leu His Leu Lys Arg Tyr Tyr Gly Arg			
115	120	125	
Ile Leu His Tyr Leu Lys Ala Lys Glu Tyr Ser His Cys Ala Trp Thr			
130	135	140	
Ile Val Arg Val Glu Ile Leu Arg Asn Phe Tyr Arg Ile Asn Arg Leu			
145	150	155	160
Thr Gly Tyr Leu Arg Asn			
165			

<210> 26

<211> 166

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<212> PRT
 <213> human

<400> 26

Met Ser Tyr Asn Leu Leu Gly Phe Leu Gln Arg Ser Ser Asn Ala Ala
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 Cys Ala Ala Leu Leu Ala Ala Leu Asn Gly Arg Leu Glu Tyr Cys Leu
 20 25 30
 Lys Asp Arg Met Asn Phe Asp Ile Pro Glu Glu Ile Lys Gln Leu Gln
 35 40 45
 Gln Phe Gln Lys Glu Asp Ala Ala Leu Thr Ile Tyr Glu Met Leu Gln
 50 55 60
 Asn Ile Phe Ala Ile Phe Ala Ala Ala Ser Ser Thr Gly Trp Asn
 65 70 75 80
 Glu Thr Ile Val Glu Asn Leu Leu Ala Asn Val Tyr His Gln Ile Asn
 85 90 95
 His Leu Lys Thr Val Leu Glu Glu Lys Leu Glu Lys Glu Asp Phe Thr
 100 105 110
 Arg Gly Ala Leu Met Ser Ser Leu His Leu Lys Arg Tyr Tyr Gly Ala
 115 120 125
 Ile Ala Ala Tyr Leu Ala Ala Lys Glu Tyr Ser His Cys Ala Trp Thr
 130 135 140
 Ile Val Arg Val Glu Ile Leu Arg Asn Phe Tyr Arg Ile Asn Arg Leu
 145 150 155 160
 Thr Gly Tyr Leu Arg Asn
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<210> 27

<211> 166
 <212> PRT
 <213> human

<400> 27

Met Ser Tyr Asn Leu Leu Gly Phe Leu Gln Arg Ser Ser Asn Phe Gln
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 Cys Gln Lys Leu Leu Trp Gln Leu Asn Gly Arg Ala Ala Ala Cys Ala
 20 25 30
 Ala Asp Arg Met Asn Phe Asp Ile Pro Glu Glu Ile Lys Gln Leu Gln
 35 40 45
 Gln Phe Gln Lys Glu Asp Ala Ala Leu Thr Ile Tyr Glu Met Leu Gln
 50 55 60
 Asn Ile Phe Ala Ile Phe Arg Gln Asp Ser Ser Thr Gly Trp Asn
 65 70 75 80
 Ala Ser Ile Val Ala Ala Leu Leu Ser Asn Val Tyr His Gln Ile Asn
 85 90 95
 His Leu Lys Thr Val Leu Glu Glu Lys Leu Glu Lys Glu Asp Phe Thr
 100 105 110
 Arg Gly Ala Leu Met Ser Ser Leu His Leu Lys Arg Tyr Tyr Gly Arg
 115 120 125
 Ile Leu His Tyr Leu Lys Ala Ala Ala Tyr Ser His Cys Ala Trp Thr
 130 135 140

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Ile Val Arg Val Glu Ile Leu Arg Asn Phe Tyr Arg Ile Asn Arg Leu
145 150 155 160
Thr Gly Tyr Leu Arg Asn
165

<210> 28
<211> 166
<212> PRT
<213> human

<400> 28
Met Ser Tyr Asn Leu Leu Gly Phe Leu Gln Arg Ser Ser Asn Phe Gln
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Cys Gln Lys Leu Leu Trp Gln Leu Asn Gly Arg Leu Glu Tyr Cys Leu
20 25 30
Lys Asp Arg Ala Ala Phe Ala Ile Pro Ala Glu Ile Lys Gln Leu Gln
35 40 45
Gln Phe Gln Lys Glu Asp Ala Ala Leu Thr Ile Tyr Glu Met Leu Gln
50 55 60
Asn Ile Phe Ala Ile Phe Arg Gln Asp Ser Ser Ser Thr Gly Trp Asn
65 70 75 80
Glu Thr Ile Val Glu Asn Leu Leu Ala Asn Val Ala His Gln Ile Ala
85 90 95
His Leu Ala Ala Val Leu Glu Glu Lys Leu Glu Lys Glu Asp Phe Thr
100 105 110
Arg Gly Ala Leu Met Ser Ser Leu His Leu Lys Arg Tyr Tyr Gly Arg
115 120 125
Ile Leu His Tyr Leu Lys Ala Lys Glu Tyr Ala Ala Cys Ala Trp Thr
130 135 140
Ile Val Arg Val Glu Ile Leu Arg Asn Phe Tyr Arg Ile Asn Arg Leu
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Thr Gly Tyr Leu Arg Asn
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<210> 29
<211> 167
<212> PRT
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<400> 29
Met Ser Tyr Asn Leu Leu Gly Phe Leu Gln Arg Ser Ser Asn Phe Gln
1 5 10 15
Cys Gln Lys Leu Leu Trp Gln Leu Asn Gly Arg Leu Glu Tyr Cys Leu
20 25 30
Lys Asp Arg Met Asn Phe Asp Ile Pro Glu Glu Ile Ala Ala Ala Ala
35 40 45
Ala Phe Ala Ala Ala Asp Ala Ala Leu Thr Ile Tyr Glu Met Leu Gln
50 55 60
Asn Ile Phe Ala Ile Phe Arg Gln Asp Ser Ser Ser Thr Gly Trp Asn
65 70 75 80
Glu Thr Ile Val Glu Asn Leu Leu Ala Asn Val Ala Tyr His Gln Ala

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85	90	95
Asn His Ala Lys Thr Ala Leu Ala Ala Lys Leu Ala Ala Ala Asp Phe		
100	105	110
Thr Arg Gly Ala Leu Met Ser Ser Leu His Leu Lys Arg Tyr Tyr Gly		
115	120	125
Arg Ile Leu His Tyr Leu Lys Ala Lys Glu Tyr Ser His Cys Ala Trp		
130	135	140
Thr Ile Val Arg Ala Glu Ile Leu Ala Asn Phe Ala Arg Ile Ala Arg		
145	150	155
Leu Thr Gly Tyr Leu Arg Asn		
165		